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National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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No. NEPRA/TRF-308/HSRPEL-2015/2471-2473
February 15, 2018

Subject: **Decision of the Authority in the matter of Inland Coal Transportation Agreement between Huaneng Shandong Ruyi (Pakistan) Energy Private Limited and Pakistan Railway Freight Transportation Company (Private) Ltd. for Transportation of Coal from Port Qasim Karachi to Sahiwal [Case No. NEPRA/TRF-308/HSRPEL-2015]**

Dear Sir,

Please find enclosed herewith the subject Approval of the Authority along with Annexure-I (32 pages) in Case No. NEPRA/TRF-308/HSRPEL-2015.

2. The Decision is being intimated to the Federal Government for the purpose of notification of the approved tariff in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

3. Please note that Order of the Authority along with Annexure-I needs to be notified in the official Gazette.

Enclosure: As above

15-02-18
(Syed Safeer Hussain)

Secretary
Ministry of Energy
'A' Block, Pak Secretariat
Islamabad

CC:
1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.

DECISION OF THE AUTHORITY IN THE MATTER OF INLAND COAL TRANSPORTATION AGREEMENT BETWEEN HUANENG SHANDONG RUYI (PAKISTAN) ENERGY (PRIVATE) LIMITED AND PAKISTAN RAILWAY FREIGHT TRANSPORTATION COMPANY PRIVATE LIMITED FOR TRANSPORTATION OF COAL FROM PORT QASIM KARACHI TO SAHIWAL

1. Background:

1.1. Huaneng Shandong Ruyi (Pakistan) Energy (Private) Limited (hereinafter "HSR" or "the Licensee") having generation license no. IGSPL/60/2006 has established a 2x660 MW Coal Power Plant at Qadirabad, Sahiwal, Punjab. HSR opted unconditional acceptance of upfront tariff dated 26th June 2014. The tariff in favour of HSR was approved on 31st March 2015 @ USc 8.36/kWh levelized. According to the approved tariff, inland freight charges shall be pass through and shall be added to fuel price.

1.2. HSR entered into an agreement with Pakistan Railway Freight Transportation Company (Private) Limited (PRFTC) on 7th July 2015 for transportation of coal from Karachi to plant site. The Agreement was signed to transport a minimum of 0.367 million tons per month of coal from Port Qasim to HSR's 2× 660 MW coal fired power plant at Sahiwal. HSR submitted the subject agreement for approval of the Authority. Following is the breakup of the rate initially submitted:

Description	Rs./Ton/km.
Fixed Freight Charges (FFC)	1.33
Variable freight charges (VFC):	0.71
Depreciation/Replacement cost	0.72
Profit Margin	0.23
Total	**2.99**

1.3. Following issues were framed for seeking comments from the stakeholders:

i- Whether the approval of freight rates quoted above come under the domain of NEPRA or these rates should be approved by the relevant/competent Authority and then forwarded to NEPRA?

ii- Whether the proposed payment of fixed capacity charges irrespective of coal transported or not is justified?

iii- Similarly, whether LDs/Penalties arising due to non-performance of any of the parties, i.e. the transporter and/or the coal purchaser, under this agreement should be passed on to the end electricity consumers?

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iv- Whether the requirement of Fixed Deposit Account (FDA) equal to six months of required coal quantity is justified?

v- Whether the options of having private companies using the Pakistan Railways infrastructure for the transport of coal for the project have been explored to arrive at a competitive freight charges?

1.4. The above issues along with brief description and salient features of the request were published in the national newspaper on October 28, 2015 for seeking comments of the stakeholders within 10 days of the date of publication. A copy of the agreement was made available at NEPRA's website for information of general public. Notices to individual stakeholder for obtaining their comments were also sent.

2. **<u>Commentators</u>**

2.1. In response to the publication of advertisement and notices, written comments were received from the following stakeholders:

i. Anwar Kamal Law Associates
ii. China Power Hub Generation
iii. CPPA-G Limited
iv. Port Qasim Authority
v. HSR
vi. Government of Sindh Energy Department
vii. Punjab Power Development Board
viii. Farrukh Rasheed Khan
ix. PRFTC

3. **<u>Anwar Kamal Law Associates</u>**

3.1. Anwar Kamal Law Associates (AKLA) submitted that the consumers who are going to be burdened with the cost of transportation of coal from the port of importation to the site of the Power Production facility are entitled to know:

a) Whether NEPRA has got carried out any feasibility study of the cost involved in transporting coal up-country?

b) If so, what are the findings of such feasibility study?

c) What are the agreements guaranteeing supply of coal?

d) What is the duration of the Coal Supply Agreements, the identity of the supplier(s) and the price at which the coal is to be purchased?

e) What is going to be the cost of the coal to the Power Producer and consequently its impact on the consumer-end Tariff? and

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f) Which entity is going to build the infrastructure for storage of coal at the port of importation and its storage at the Power Project site?

3.2. According to AKLA whichever entity may bear the burden of the cost of the storage facilities, eventually it is the Pakistanis who will have to shoulder the cost be it citizen, tax-payer or consumer of electricity. If the Authority is bent upon allowing the arrangement, in no case whatsoever should a 'take or pay' arrangement be permitted.

4. **China Power Hub Generation Company Limited**

4.1. China Power Hub Generation Company Limited (CPHGCL) vide letter dated November 06, 2015 submitted that the coal supply chain from Ocean Going Vessel discharge to power plant battery limit is an integral part of the coal fired power projects and a reliable long-term logistics solution is critical. The proposed structure of fixed and variable freight charges by Pakistan Railways (on behalf of GOP) is a prudent approach of allocating appropriate risk to relevant entity. The proposed structure is in line with guaranteed indexed fixed capacity charge and indexed variable charge in the Power Purchase Agreement (PPA) which would result in reducing risk for all stakeholders (Power Purchaser, Sponsors, Lenders, and Service Providers etc.) and help in achieving financial close for these mega projects. Accordingly CPHGCL believe that similar structure of fixed and variable charges (with appropriate & relevant indexations) would be applicable to the discharging and barge transportation of coal from Ocean Going Vessel to Seaside Coal Power Projects.

5. **Central Power Purchasing Agency Guarantee Limited**

5.1. As per the requirement of Power purchase agreement, the executed ICTA between the project sponsor and PRFTC submitted by the project sponsor for consent and the draft ICTA mentioned by NEPRA on its website for comments certain differences were observed which are as follows:

a) The Company submitted the executed ICTA to Power Purchaser, whereas, in the above referred letter NEPRA has mentioned a draft ICTA submitted by PPDB.

b) Schedule-1 of ICTA in both versions is dissimilar with each other.

c) The breakup/detail of the costs mentioned in Annexure-I is not provided in both versions.

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5.2. CPPA-G stated that the requisite comments will be offered after ascertaining the status of ICTA (draft or executed), so that both offices (NEPRA and Power Purchaser) may have the same document for deliberation.

6. **Port Qasim Authority**

6.1. Port Qasim Authority vide letter dated 26th November, 2015 supported the project and signing of the desired Agreement to meet shortage of energy in the country.

7. **The Petitioner-Huaneng Shandong Ruyi (Pakistan) Energy (Private) Ltd**

7.1. The Petitioner submitted that pursuant to Schedule 1 of the ICTA, the Freight Charge has been determined at Rs. 2.99 per kilometre/ton without taking into consideration the cost element pertaining to development of Spur line and peripheral infrastructure from Yousufwala Railways Station to site of the complex. Now, after exploring all possibilities, the Government of the Punjab has agreed to arrange requisite funds and shall enter into an agreement (which is currently being negotiated) with the Transporter, who will undertake construction of the said infrastructure. Funds so provided, including financing cost by the Government of the Punjab shall be recovered as a pass through item along with the Freight Charges envisaged in the ICTA, subject to NEPRA's approval. TheHSR further submitted that the loading facilities at the Loading Point are being developed as a common user facility for coal fired power projects (including the plant of the Company) by the Port Qasim Authority (PQA). The HSR shall procure related services from PQA on an on-going basis and recover such costs as a pass through item of the tariff, subject to approval of NEPRA.

8. **Government of Sindh Energy Department**

8.1. Government of Sindh Energy Department submitted point wise reply vide its letter dated November 6, 2015.The crux of the point wise reply is that NEPRA may refer the coal transportation tariff issue to CCI for constituting a relevant competent authority for determining coal transportation tariff.

9. **Punjab Power Development Board Energy Department**

9.1. Punjab Power Development Board submitted that as per the Authority's upfront tariff decision for the coal based power project, the costs for fuel cost component includes FOB coal price, marine freight & insurance charges, other costs, common jetty facility cost and actual inland freight. However we understand that due to the site specific individualities, company's fuel cost component will be based on following costs;

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a. FOB coal price together with Marine Freight & Insurance charges

b. Coal handling cost at port;

   i. Upfront construction cost relating to development of new infrastructure at port required for connectivity of Pakistan International Bulk Terminal (PIBT)/ Port Qasim Authority (PQA) system with the coal carriers of Pakistan Railways (PR); and,

   ii. Other expenses of recurring nature

c. Cost incidental to construction of Railway Spur line

d. PR transportation charges (from port to the complex)

9.2. PPDB agreed that the cost mentioned at (a) of the above is the main cost accounted for FCC in the upfront tariff determination and the cost mentioned at point b above will be covered under the head of 'cost of common jetty facility and other costs' as mentioned in upfront tariff determination.

9.3. PPDB further submitted that as per the stipulation of ICTA, the maintenance of FDA by HSR does not place any additional financial burden from viewpoint of Power Purchaser; due to the fact that the HSR is bearing this cost out of the 'Cost of Working Capital' component of the Generation Tariff available in the Upfront Tariff.

9.4. PPDB also mentioned that as per the amended ICTA the freight charges will be depicted as follows:

- Operational Freight Charges in terms of Rs./kM/M.Ton under monthly invoicing scheme; and,
- Development Freight Charges, relating to recovery of loan facility granted by the Punjab Government to PRFTC for construction of Railways Spur line, through a quarterly invoicing mechanism.

10. **<u>Farrukh Rasheed Khan</u>**

10.1. Farrukh Rasheed Khan vide letter dated 12th November, 2015 submitted that LDs should not be passed on to the end consumers and should be resolved by the coal transporter and coal purchaser and has also objected the opportunity provided only to state controlled Pakistan Railways for coal transportation without giving any chance to private companies in this matter. Further stated that since no competitive price option has been explored, the coal transportation charges as sought by PPDB seem unjustified.

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11. **Pakistan Railway Freight Transportation Company (Pvt) Ltd**

11.1. PRFTC submitted that:

a) PRFTC is a government owned Company, established with the approval of PM of Pakistan and is registered under the Companies Ordinance, 1984. As per the sub para-4 of para III of the approved Memorandum authorizes the company to determine its fares/freight.

b) The quoted freight rates have been approved by its Board of Directors headed by Secretary, Ministry of Railways, Government of Pakistan and, as such, have already been approved by the relevant/competent authority.

c) Without prejudice to Para a) above, PRFTC under section 1.1 of the ICTA, has assured transportation of monthly committed quantity of 366,667 metric tons of coal and in collaboration with Pakistan Railways, is in the process of building power plant specific capacity. Furthermore, PRFTC (the transporter) is liable to pay liquidated damages for failure under sections 8.1 & 8.2 of the ICTA. As such, failure of the Power Project Company to provide the committed quantity of coal shall entail payment of fixed capacity charges (fixed freight charge).

d) It is pointed out that Freight Deposit Account is not Fixed Deposit Account. Moreover, it is not equal to six months of required coal quantity, but, was reduced to just Rs. 1 billion only on request of the Sponsor Company (HSR). It is further clarified that Pakistan Railways, as a matter of policy, always require Freight Deposit Account from customers having bulk commodities for long term transportation.

12. **PROCEEDINGS**

12.1. The Authority also decided to hold a hearing in the matter to provide an opportunity for commentators and stakeholder to express their views personally. Initially the hearing was fixed for February 25, 2016, however, PPDB, vide letter dated February 10, 2016 requested to defer the aforementioned hearing for two weeks, so as to enable them to furnish a revised version of the ICTA for Authority's review. The Authority approved the request and subsequently, hearing in the matter was postponed till further intimation and stakeholders were informed accordingly.

12.2. NEPRA vide its letter dated 11thMarch, 2016 advised PPDB to submit the amended ICTA as soon as possible, so that the hearing could beheld. PPDB replied vide its letter dated 31st March, 2016 that amended ICTA will be submitted by mid

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April 2016. Since the revised ICTA was not submitted by PPDB as committed, the Authority decided to hold the hearing on April 26, 2016. Meanwhile, HSR submitted the amended ICTA related to development freight charges on April 24, 2016.

13. **ISSUES FRAMED FOR THE HEARING**

13.1. Based on the amended ICTA submitted by HSR and comments from stakeholders, the following issues was framed for the hearing:

i. The present line capacity of Pakistan Railway (PR) is limited due to old signalling system and it is not possible for PR to provide coal transportation for Sahiwal, Muzaffargarh and Rahim yar khan power projects with existing signalling system. How is PR addressing this issue?

ii. Is the PR modernizing its infrastructure wholly at the cost of electricity consumers or the proposed Rs 2.99 per ton per km contain expenditure relating only to the necessary infrastructure needed to transport the required coal to the Sahiwal power project?

iii. What is the guarantee that PR would be able to undertake the modernization of the existing infrastructure before the start of COD?

iv. What is the basis of loan amounting to Rs 5,124.35 million on account of development of Spur line?

v. Whether the approval of freight rates quoted above come under the domain of NEPRA? If not who is the competent/relevant authority in this regard?

vi. Whether the options of having private companies using the Pakistan Railways infrastructure for the transport of coal for the project have been explored to arrive at a competitive freight charges?

vii. What is the basis of inland freight of Rs 2.99/ton/km including its components both fixed and variable?

viii. Whether or not the proposed payment of fixed capacity charges irrespective of coal transported is justified?

ix. Similarly, whether LDs/Penalties arising due to non-performance of any of the parties, i.e. the transporter and/or the coal purchaser, under this agreement should be passed on to the end electricity consumers?

x. Whether the requirement of Freight Deposit Account (FDA) equal to six months of required coal quantity is justified? And what is the cost of maintaining FDA?

13.2. A hearing in the matter took place on April 26, 2016 which was attended by representatives from PPDB, PRFTC, Port Qasim Authority, the Licensee, Ministry

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of Planning, Development and Reform and other stakeholders. During the hearing, the Licensee briefed the Authority regarding the progress of the power project at Sahiwal. PRFTC also explained their stance on some of the issues concerning them.

13.3. Since the list of issues was revised subsequent to submission of revised ICTA, therefore, it was decided to seek comments again from the public/stakeholders. In this regard, advertisement was issued on May 04, 2016 giving 14 days for submission of comments. Notice to seek comments on the revised set of issues was also sent to individual stakeholder including HSR. In response to the second advertisement, PRFTC and Ministry of Planning, Development and Reform submitted their comments.

13.4. Subsequent to the hearing, HSR failed to provide the requisite information and didn't provide issue wise replies. Without perusing such information, no decision as to the approval of the terms and conditions contained in the Inland Coal Transportation Agreement could be taken, therefore, HSR was informed vide NEPRA letter dated July 15, 2016 that

> *"...due to non-provision of information, the terms and conditions contained in the ICTA are therefore not approved which shall be considered as and when the requisite information is provided."*

13.5. In response to the NEPRA letter, HSR submitted information vide its letters dated January 01, 2017 and revised letter dated February 06, 2017.

13.6. Issue wise replies of the PRFTC and other stakeholders along with Authority's findings are stated hereunder:

14. <u>**Issue-i& ix**</u>

The present line capacity of Pakistan Railway (PR) is limited due to old signalling system and it is not possible for PR to provide coal transportation for Sahiwal, Muzaffargarh and Rahim yar khan power projects with existing signalling system. How is PR addressing this issue?

Similarly, whether LDs/Penalties arising due to non-performance of any of the parties, i.e. the transporter and/or the coal purchaser, under this agreement should be passed on to the end electricity consumers?

14.1. PRFTC submitted that, there are no line capacity issues with PR. The minimum line capacity between Kotri– Lodhran is 36 trains a day (each way). At present, there is spare line capacity-of 08 trains a day, whereas, the Sahiwal Power Project's coal requirement is 05 trains a day. With regards to issue # ix, PRFTC informed

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that the LDs/Penalties arising due to non-performance of any of the parties, entail respective obligations on the party concerned to bear respective LD/Penalty and the same is not passed on to the end electricity consumers as per scheme of the ICTA.

14.2. Ministry of Planning, Development and Reform (MPDR) submitted that under CPEC framework a project ML-I for up gradation/improvement of existing track and signalling system of Pakistan Railways is under process. Moreover, a project for coal conveying system at Port Qasim has also been approved. Therefore, PR should provide a firm timeframe for its upgraded line capacity and signalling system etc. synchronized with the power plant COD to the power company and subsequent satisfaction of the regulator. As PR will receive freight including profit against transportation of coal; therefore, modernization cost of PR should not pass on to the end consumer. With regards to issue # ix MPDR was of the view that either party receives return for their services; therefore, non-performance of either party should not pass on to the end electricity consumers.

15. **Authority's findings**

15.1. As clarified during the hearing and also in writing, PRFTC has provided assurance that it has the required trains to bring coal to the power station. Further, there are no additional coal plants of similar size to be built in the mid country. Therefore, the issue of limited line capacity may not emerge. In view thereof, issue # i stands addressed.

15.2. While reviewing ICTA it was observed that under the ICTA Clause 8.1 and 8.2, the transporter (PRFTC) is required to pay damages/penalties, in case it fails to deliver coal to the agreed project site. In such case, the payment shall include :

a) any liquidated damages payable to the Power Purchaser under section 9 of the Power Purchase Agreement; and

b) the Capacity Payments or any part thereof, which the Company would have been entitled to receive from the Power Purchaser under Section 9.1 of the Power Purchase Agreement but which the company cannot due to the failure of the Transporter to deliver coal.(section 8.2, ICTA)

15.3. These clauses provide assurance that the cost (fixed capacity payment etc.) arising due to non-performance of PRFTC shall be paid by the transporter hence the consumer is protected under the ICTA even if there is line capacity constraint. However, under Section 15.1 a) subsection IV&V, of Power Purchase Agreement

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(PPA) signed between CPPA-G and the HSR, such non-performance of transporter has been declared as Force Majeure event which means in case of non-delivery of coal due to non-performance of the transporter and non-payment of LDs and capacity charges to HSR by PRFTC, the capacity payment will be paid by the CPPA-G to HSR. This clause nullifies the ICTA section 8.1 and 8.2 and thus exposes the consumers to PRFTC's incompetence/inefficiencies. This, in the opinion of the Authority, is not justified. However, appropriate directions shall be issued to rectify relevant clauses in the PPA while considering the case of approval of the Power Purchase Agreement between HSR and CPPA-G.

16. **Issue-ii**

Is the PR modernizing its infrastructure wholly at the cost of electricity consumers or the proposed Rs 2.99 per ton per km contain expenditure relating only to the necessary infrastructure needed to transport the required coal to the Sahiwal power project.

16.1. PRFTC submitted that the proposed rate of Rs 2.99/ton/km relates to cost of coal transportation for Sahiwal power project only. And it is the minimum rate for PR below which it will not be financially viable for the organization. PRFTC further informed that no modernization of the existing infrastructure is required to cater for the coal requirement of the Sahiwal Power Project.

16.2. MPDR submitted that as PR will receive freight including profit against transportation of coal, therefore, modernization cost of PR should not be passed on to the end consumer.

17. **Authority's finding:**

17.1. As discussed in the succeeding paragraphs, modernizing cost only to the extent of Sahiwal power project has been included through annual depreciation charges and not of the overall PR up gradation. Hence this issue stands addressed.

18. **Issue-iii**

What is the guarantee that PR would be able to undertake the modernization of the existing infrastructure before the start of COD?

18.1. PRFTC submitted that the guarantee is ICTA itself. Should there be still any apprehensions as to PR's capacity for said transportation, the Power Project Company may look for any other reliable mode of transportation in accordance with exiting clauses of the ICTA.

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18.2. MPDR stated that PR should give to the power company a detailed plan to modernize its infrastructure capable to transport coal to power plant as per COD for subsequent entire satisfaction of the regulator.

19. **<u>Authority's Finding:</u>**

19.1. It was observed that ICTA has clear provisions, which protect the consumers from non-performance of the transporter. Under the ICTA, even if modernization doesn't take place before the COD and PRFTC is unable to transport coal to the site, consumers are protected from any consequential LDs provided that such protection is also reflected in the PPA between HSR and CPPA-G as discussed under issue #i and six above. Hence this issue stands addressed.

20. **<u>Issue-iv</u>**

<u>What is the basis of loan amounting to Rs 5124.35 million on account of development of Spur line?</u>

20.1. PRFTC submitted that the basis of loan amounting to Rs.5,124.35 million are estimates of following works which are to be completed to put in place connectivity between railhead and Power Project site:

i. Laying of 4.5 km Spur line (double line 09 kms);
ii. Laying of yard 16 Kms;
iii. Construction of bridge across lower bari doab canal 119 meters long;
iv. Three other small bridges each having length of 05 meters;
v. Shifting of level crossing and construction of overhead bridge in Railway yard;
vi. Shifting of existing Railway station (Yousafwala) on other site of Track;
vii. Shifting of a Mosque and Tomb to other places;
viii. Installation of computerized Block interlocks signalling system; and
ix. Construction of staff quarters, loco shed and other structures

20.2. PRFTC submitted that the estimates are based on latest rates available with Pakistan Railways.

21. **<u>Authority's Findings:</u>**

21.1. The documents submitted explain that transportation of coal to the project site as committed under the ICTA require rail connectivity between Yousufwala railway station (located on Main Line Sahiwal-Lahore) and the Power Project site (located at a distance of 4.5KM across the lower Bari Doab Canal). The said rail connectivity

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for the purpose of coal transportation and its facilitation, included the following works which are required to be completed:

i- Laying 4.5 KM double track from Yousufwala to boundary wall of the power project site;

ii- Construction of 86 meters king bridge over the Canal and 17.5 meter along another bridge on a minor running parallel to Canal;

iii- Shifting of existing Yousufwala Railway station (on up line) to other side of the track (on down line);

iv- Construction of loco shed for fuelling and minor repairs to locos and the sick lines for Hopper Wagons;

v- Construction of stabling yard having capacity to accommodate at least 6 trains;

vi- Residential quarters for staff, building for PRFTC's Offices, procurement of vehicle, furniture and fixtures and other logistics.

21.2. For this purpose, Rs5.12 billion was estimated to be the cost of the project as informed by PPDB. The funds are provided by the Government of Punjab (GoPb) to the PRFTC. The HSR will reimburse the funds under the ICTA to PRFTC and PRFTC would pay it back to the GoPb. A facility agreement was submitted which is signed between GoPb (Energy Department) and PRFTC wherein, the terms of loan were agreed. An interest rate of KIBOR +0.5% was agreed for an estimated total cost of Rs 5.8 billion that includes CAPEX of Rs 5.1 billion and Rs 0.7 billion, IDC for the 24 month construction period with debt repayment to be made in 10 years after COD.

21.3. The HSR submitted the following cost details:

Cost Heads	**Rs In million**
Laying down of track assembly yard etc.	2025.79
Building infrastructure	1924.2
Cost of signaling	260.02
Cost of project management	142.72
Total Capex	**4352.73**
Contingencies @7%	304.76
Escalations @10%	465.85
Total Project Cost Without IDC	**5,123.34**
IDC	703.00
Total Project cost with IDC	**5,826.34**

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21.4. The Spur line will enable PRFTC to bring the coal to the power plant. In the opinion of the Authority there is no denying the fact that construction of Spur line is very critical and without it, there would be no other economical way to bring the coal from the Yousufwala station to the power plant. Therefore, its construction is necessary. The Authority also observed that the 4× 1200MW RLNG projects and Nandipur power plant have been allowed to include LNG pipeline related costs which is similar in infrastructure to what the HSR is requesting. Therefore, it has been decided that Spurline cost in principle should be allowed to HSR.

21.5. While reviewing the breakup of Spurline cost details it was noted that the HSR has included contingencies @ 7% and escalations @10% in the total project cost. As a regulatory norm, the project escalation and contingencies are not allowed as the need for such provision vanishes when the project cost itself is adjusted to actual. Therefore, contingencies and escalation costs have not been considered. On the basis of Spur line CAPEX cost of Rs 4.35 billion and average drawdown during the construction period of 2 years, the revised IDC works out Rs. 597 million. Accordingly, the total Spurline project cost works out Rs4.95 billion. The Spurline cost shall be subject to adjustment at actual as per the applicable price escalation, if any, at the time of COD on the basis of verifiable documentary evidence. The IDC shall also be re-established at the time of COD on the basis of actual cost and actual drawdown; thus repayment schedule will accordingly be revised. On the basis of Spur line cost of Rs 4.95 billion, the monthly payment under this head works out to be Rs 57.34 million. This translate to a freight component of Rs189.82 per ton for the first 10 years debt repayment period after COD and on the basis of monthly coal quantity of 302,087metric tons. Invoice for spur line cost shall be raised on the basis of monthly quantity of 302,087 and shall not be subject to variation in actual coal quantity transported. This component shall be adjusted post COD with variation in quarterly KIBOR only.

22. **Issue-v**

Whether the approval of freight rates quoted above come under the domain of NEPRA? If not who is the competent/relevant authority in this regard?

22.1. PRFTC submitted that the approval of freight rates is not domain of NEPRA. The competent/relevant authority is PRFTC's Board of Directors.

22.2. MPDR stated that the coal transportation is for power generation and the cost of transportation will be reflected in power tariff for end consumers. Therefore,

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NEPRA being a power sector regulator and responsible to protect the interest of the electricity consumers would be a relevant authority in this regard.

23. **Authority's Findings:**

23.1. The Authority observed that there is no body or authority which has been mandated to determine the rates of the coal transportation for a power plant. Further, the transportation of coal is one of the components of tariff and the same is going to be recovered from the electric power consumers. Moreover, NEPRA is exclusively responsible to regulate the provision of electric power services in the country. Since the cost of the transportation of coal is going to be recovered from the electricity consumers, therefore, it is the obligation on part of NEPRA to examine the prudence of the rates and then approve the same. PRFTC is going to provide services to a licensee of NEPRA and all the information has to be provided by the licensee and justified by it. Therefore, to review the prudency of freight does come under the domain of NEPRA. Hence this issue stands addressed.

24. **Issue-vi**

Whether the options of having private companies using the Pakistan Railways infrastructure for the transport of coal for the project have been explored to arrive at a competitive freight charges?

24.1. PRFTC submitted that this is for the sponsor company to comment. However, without prejudice to the foregone, there is no private company for transportation of coal by rail.

24.2. MPDR on the aforementioned issue expressed that under access to track policy, private sector can utilize the PR track. Therefore, competitive bidding for the transportation of coal by using the PR infrastructure should be taken into account/considered.

25. **Authority's findings:**

25.1. As informed by PRFTC, the option of private companies transporting coal using the network of PR could not be explored. In the absence of open access policy, there is no way to check the competitiveness of the agreed freight rates. However, its comparison with road transportation of coal and RFO transportation by railway network on per MMBTU basis was carried out and was found comparable.

26. **Issue-x**

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Whether the requirement of Freight Deposit Account (FDA) equal to six months of required coal quantity is justified? And what is the cost of maintaining FDA?

26.1. PRFTC submitted that FDA is almost equal to one month's freight not that of six months. Moreover, it is an advance freight which would be adjusted against actual freight charges for each day and has absolutely no additional impact on the end electricity consumers.

26.2. MPDR stated that as such arrangement would have impact on the final tariff, therefore, to have minimum impact; the FDA equal to only one month may be considered. Alternatively, the provision of late payment available to the IPP's may also be made applicable to the service providers like PR.

26.3. Since PRFTC has clarified that FDA bears no impact on consumer end tariff therefore, this issue stands addressed.

27. **<u>Issue-vii& viii</u>**

<u>What is the basis of inland freight of Rs 2.99/ton/km including its components both fixed and variable?</u>

<u>Whether or not the proposed payment of fixed capacity charges irrespective of coal transported is justified?</u>

27.1. PRFTC replied that the scrutiny of freight rate of Rs2.99/t/km is not the domain of NEPRA. Without prejudice to the foregone, the basis is cost of transportation plus nominal profit margin. PRFTC submitted that the Payment of fixed capacity charges, irrespective of coal transported is highly justified since procurement of higher horse power locomotives and high speed hopper wagons are specific for Sahiwal Project. Furthermore, the ICTA stipulates assured transportation of a fixed quantity of Coal (366,667 ton per month) and non-transportation thereof, entails penalties /LDs. Likewise, if the capacity (built specially for Power Project) is not used and goes waste, the Power Project Company is obligated to make capacity payment.

27.2. MPDR submitted that the inland freight must be competitive in the region. An Average freight in India is 2 cents/ton/km. MPDR further stated that normally fixed capacity charges are applicable where the capacity is available but the purchaser fails to realize it.

27.3. China Power Hub Generation Company Ltd endorsed the amended ICTA by stating that the proposed structure is in line with guaranteed fixed capacity

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charges and indexed variable charge in Power Purchase Agreement (PPA) and further stated that any similar specialized logistic solution by other coal power plant should also be allowed with similar costs. (i.e. fixed charge on maximum monthly quantity and variable charge for actual delivered quantity)

28. **CPPA-G Comments/Observations**

28.1. Central Power Purchasing Agency Guarantee Limited (CPPA-G) being the power purchaser vide letter dated May 04, 2016 after hearing also submitted detailed comments which are as under:

i. The cost of inland Coal Transportation from the Port Qasim to the Yousafwala site is quoted as Rs.2.99/Km/Ton, which seems to be on higher side. It can be compared with the coal transportation charges prevailing in the region. The cost of spur line has not yet been clarified and its rate is charged in Inland Coal Transportation Agreement (ICTA).

ii. Whether the components of Inland Coal Transportations Tariff will be separately indexed or will it be part of Fuel Cost Component?

iii. Additional cost will be required, if coal having lower calorific value is transported up to site of the project, since calorific value assumed in the CSA is lower than that of calorific value assumed in upfront tariff.

iv. No details of assumption have been provided for the calculation of freight charges at Rs.2.99/Km/Ton in the Inland Coal Transportation Agreement nor was it shared by Pakistan Railway Freight Transportation Company (PRFTC) during presentation in the hearing.

v. Cost incurred by PRFTC on the development of infrastructure is to be recovered by the consumers; will the cost be shared with other non-coastal power plant?

vi. The tariff accepted by the project company and determined by NEPRA was under the regime of upfront tariff. After inclusion of Inland Freight Charges (Rs.2.99/Km/Ton., which may be up to Rs.1 per kWh) will transform the nature of upfront tariff.

vii. PPIB must also be taken on board for this agreement and for these additional inland freight charges, as Tripartite LOS was issued to M/s HSR by PPDB & PPIB.

viii. PRFTC pointed out that these freight charges are not to be approved by NEPRA as these are not in the purview of NEPRA. But it is respectfully submitted that Power Purchaser can and will only consider those cost/expenditures which are approved by NEPRA

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29. **Petitioner's reply to CPPA-G**

29.1. CPPA-G's above referred observations were forwarded to the Petitioner for comments/response. The Petitioner submitted Para wise response on the observations of CPPA-G which are as follows:

i. The rate of Rs. 2.99/km/ton has been quoted by PRFTC, Ministry of Railways, and Government of Pakistan. The initial rate quoted by PRFTC was higher than the above mentioned number, however, being cognizant of the impact of the rate on the cost of energy, the Company raised its concern in the matter. Following which PRFTC reduced the rate to the current level and any further reductions were not possible. The Authority may note that the Company ventured into the Project following assurances from both the Government of Punjab (GoPb) and the GOP that coal supply will be the responsibility of Pakistan Railways (PR) and the Company is constrained to convey any rate quoted by PRFTC under this arrangement as a pass through item. With regards to the cost of spur line and the applicable rate, the Company has approached PRFTC and Energy Department GoPb for the purpose.

ii. It is proposed that the Inland Coal Transportation Tariff will be separately charged and indexed. However, the Company is willing to work out any mechanism with CPPA-G or NEPRA which fully passes through the obligations under the ICTA.

iii. We understand that there is no limitation with respect to coal CV defined in the Upfront Tariff. Notwithstanding the above, the Authority may please note that the Project Company is required to ensure availability of coal supply during its 30 years concession period. In such a case, the long term availability of coal, during such period, has to be ascertained. Whereas it is in the interest of both the Company and the consumers that higher CV coal may be used, the availability of high CV coals for an extended period is not established. In such a scenario, the Company designed its plant based on its expectation of available coal for the long term having a LHV of 20.20 MJ/kg (4,827.9 kcal/kg) and with the capability to burn coal up to [23.01 MJ/kg. (5,500kcal/kg).], which is a reasonable design range. The value for the design coal was specified in the feasibility report approved by the Panel of Experts of PPDB as well the generation license application to the Authority. Whereas the Company has submitted two proposed Coal Supply Agreements (CSA's) to CPPA-G with minimum CV's of 3,800 kcal/kg and 5,500 kcal/kg; the purpose was to blend the coal with minimum use of low CV coal.

iv. The underlying assumptions for the Rs. 2.99/km/ton tariff under the ICTA were not provided to the Company and the matter was discussed during the hearing conducted by the Authority.

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v. We are not aware of any such sharing; however, we have referred this question to PRFTC for their response.

vi. As per our understanding, the nature of Upfront Tariff, after the inclusion of inland freight charges, is not transformed since a provision of pass through of inland freight has been included in Fuel Cost under Clause (H) (xix) of the Upfront Tariff.

vii. A copy of the ICTA has been provided to PPIB.

viii. The Company has noted CPPA-G's position on the matter; however if any provision of the ICTA which relates to payment or the tariff is not a pass through under the PPA, the Project will not remain bankable. The rates and other provisions have been provided by PRFTC, which is a government agency and the Company is constrained in this matter.

29.2. Based on the information submitted by the Petitioner, the following breakup of the requested freight rate has been worked out:

Description	Wages	Material	Oil & Grease	Fuel	Total	Rs./km /ton	Rs. Million
	Rs./km.	Rs./km.	Rs./km.	Rs./km.	Rs./km.		
Variable Expenses:							
Loco Maintenance:							
i. Running Repair	39	66			104	0.09	2,358
ii. Workshop Repair	44	44	5		94	0.08	2,113
Carriage & Wagon Maintenance:							-
i. Running Repair	42	15			57	0.05	1,290
ii. Workshop Repair	31	6			37	0.03	843
iii. Repair of Machinery & Tools	10	0	22		33	0.03	739
Train Staff	40	-			40	0.03	906
Total Variable O&M	207	131	27	-	365	0.30	8,248
Fuel	-	-	-	486	486	0.41	10,985
Total Variable Expenses	**207**	**131**	**27**	**486**	**851**	**0.71**	**19,233**
Fixed Expenses:							-
Station Staff and Control Office	166	-			166	0.14	3,745
General Administration	313	-			313	0.26	7,063
Repair & Maintenance:							-
i. Tracks	133	84			216	0.18	4,888
ii. Building	20	5			25	0.02	555

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iii. Equipments	5	5			10	0.01	222
Repair & Maintenance:							-
i. Signal	10	6			15	0.01	350
ii. Telecom	6	1			8	0.01	172
Repair & Maintenance:							-
i. Overhead Equipment	19	3			22	0.02	497
ii. Service Motor Cars and Trolleys	75	53			128	0.11	2,883
Pension	659				659	0.55	14,879
Welfare		1			1	0.00	30
Interest		0			0	0.00	4
Miscel.	13	23			36	0.03	813
Total Fixed Expenses	**1,417.31**	**180.76**	**-**	**-**	**1,598**	**1.33**	36,099
Total Operational Expenses	**1,624.48**	**311.39**	**27.34**	**486.28**	**2,449.49**	**2.04**	**55,332**
Depreciation:						**0.72**	
Profit						**0.23**	
Total Freight Charges						**2.99**	

29.3. With regards to the efficiency of these new engines PRFTC informed that:

1) "The Efficiency of the DE 4000/4500 HP Locomotives cannot be gauged at present as the subject locomotives are under trial process. It is pertinent to mention, however, that it must be envisaged that the procurement of these heavy Locomotives has been done in lieu of the 12000 Tons/day Coal demand of the Yousufwala power plant. On conventional 3000 HP Locomotives of Pakistan Railways, this business would have meant haulage of 1200-1500 Tons of Coal per train on average. The induction of the 4000/4500 HP Locomotives has been done not only to halve the quantum of freight trains required to conventionally operate per locomotive but also to carry 2400 Ton of load per freight train in a single hook.

2) With 4000/4500 HP capacity, the newly procured GE Locomotives will no doubt haul greater loads per unit of train but this would entail more fuel consumption per unit of the traffic hauled.

3) The true efficiency of the Locomotives can be only gauged once the operational constraints like line capacity and signalling system of the track/running line is improved. The signalling system over Kotri-Lodhran section (660 Km) is being modernized and since the start of the operation of the Coal freight trains for Yousufwala, the real time turn-round for the trains fluctuates between 5.1 to 5.5 days.

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4) It also must be borne in mind that the higher HP of locomotives and capacity of the Hopper trucks also induces an axle load of 23 Tons against existing corresponding average of 21 Tons, which will lead to increased operation and maintenance costs per Km"

29.4. HSR was directed vide letter dated 2nd June 2017 to provide following information regarding the request for approval of Inland Coal Transportation Agreement entered into with PRFTC/Pakistan Railways:

i. Details of Fixed Freight Charges ofRs.1.33/Kilometer/ton:

HSR/PR was directed to identify, allocate and ring fence the needed human resource and maintenance cost on efficient benchmarks for the transportation of coal from Karachi to Sahiwal plant site. On the basis of allocation of cost for coal transportation operation, fixed freight charges/kilometer/ton needs to be recalculated and submit the same for consideration of the Authority backed up by detailed workings and supporting documents/evidence.

ii. Details of Fuel Cost Component of Variable Freight Charge of Rs. 0.404/kilometer/ton:

HSR/PR was directed to recalculate the fuel cost component on the basis of fuel consumption per kilometer of the new GE locomotives as per manufacturer's specifications and submit the same for consideration of the Authority duly supported by documentary evidence.

iii. Details of O&M Cost Component of Variable Freight Charge of Rs. 0.304/kilometer/ton:

HSR/PR was directed to recalculate the O&M cost component on the basis of manufacturer's recommendations for oil & lubricants and parts/material and submit the same for consideration of the Authority duly supported by documentary evidence.

iv. Details of Capital Expenditure of Rs. 26.47 billion on Purchase of Locomotives and Hoper Wagons:

HSR/PR was directed to provide evidence/support of the actual purchase and cost of locomotive(s) and hoper wagons for consideration of the Authority.

29.5. HSR vide its letter No. HSR-SWL-COMMERCIAL-0084 dated 6th July 2017, submitted that they are actively pursing PRFTC to submit the requisite information

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within the minimum possible time, but not more than three months. HSR further submitted that the Project has started supply of electricity to National Grid since May 12, 2017. According to HSR, besides other heads of expenditures, they are incurring huge cost for import of coal for production of electricity. Accordingly, under the PPA, HSR is eligible for Pre-COD billing to the Power Purchaser on account of supplied electricity for certain components of the tariff, including but not limited to Fuel Cost Component (the "FCC"). The FCC also encompasses PRFTC related freight charges. The Company has already submitted its request on May 31, 2017 for adjustment of FCC for the Month of May 2017 before submission of formal invoice for the said Month to the Power Purchaser. However, by virtue of unapproved ICTA, our indexation request is lying pending with the Authority. This is also delaying our invoice for the Month of June 2017. Ultimately, delayed approval process is resulting into huge financial burden on the Company and may lead to stoppage of supply of further electricity to the National Grid. HSR requested for consideration and approval of freight charges specified in the ICTA on interim basis for a period of three months until its ultimate decision in respect thereof based on awaited data/information from PRFTC.

29.6. The Authority considered the request of HSR for interim approval of freight charges for three months. Keeping in view the continuous supply of electricity to the grid from May 2017, company's requirement of funds to maintain the supply of electricity and the pending fuel cost component adjustment for the month of May 2017, the Authority considers that the request of HSR is reasonable and justified. Accordingly, the Authority approved interim freight charges vide its decision dated 28th July 2017 for transportation of coal from Karachi to plant site for a period of three months. The approved interim freight charges were extended for further three months vide decision dated 6th November 2017.

29.7. HSR vide its letter No. HSR-SAHIWAL-COMMERCIAL-0807 dated 7th August 2017 submitted the Para wise reply of PRFTC/Pakistan Railways, however, the desired information was not provided except some information on fuel cost. The Authority considered submissions of PRFTC and decided to hold a hearing in the matter. Accordingly the hearing was held on 2nd November 2017 which was participated by representatives from PRFTC, HSR, PPDB and CPPA. During the hearing, CEO PRFTC submitted that they are prepared to provide all the requisite information. After the hearing, the representatives of PRFTC provided relevant pages of the contract for supply of locomotives and wagons and also explained the calculation of fuel consumption/kilometer. The information pertaining to ring fencing of fixed freight charges and details of variable O&M was committed to be

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provided later. Accordingly, PRFTC vide its letter No. PRFTC/CT-QPP/2017 dated 8th November 2017 submitted further information in the matter. The submissions of the PRFTC are as under:

A. Fixed Charges of Rs.1.33/Km/Ton

- The charges, under reference, relate to Station Staff, Control Offices, General Administration, Pensions, improvements etc. and sensu stricto are not fixed as such.
- These are variable expenses, but, have been designated as fixed, in the ICTA, in the sense that these are to be paid to PR irrespective of train movement should M/s. HSR fail to utilize the capacity of PR for transporting 366,667 Tons of coal per month from Karachi to Power Plant site at Qadirabad.
- These are to be charged against shortfall quantity of coal which is fixed at 366,667 Tons per month.
- The charges have been worked out in two stages and are ring fenced in 2ndstage. The detail is as follows:

i. 1st Stage

- The calculation of the charges is based upon all the expenses worked out in the Financial Review (a copy already filed) and Travelled Kilometers over the PR Network.
- The Railway corridor from Karachi to Sahiwal is the busiest one and almost 80% of the work force of the entire system is employed over it.
- The cost component has been derived by apportionment of the total cost to Travelled Kilometers for ascertaining per Kilometer cost.
- In the case under reference, the total train kilometers travelled (Financial Year 2014-15) were 26.662 Million (PR Year Book 2014-15).
- Out of the aforementioned total kilometers, the Freight Train Operation was of 4.720 Million Kms which worked out to 18% of the total system kilometers travelled.
- Thus only 18% of the total expenses was taken as share of total freight trains for determination of the FFC on Freight Operation and that, too, was linked to per Km/Ton.

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- Now up to the above point, the expenses cannot be ring fenced and the freight trains being run for power plant site will have to share the overall efficiency as well as inefficiency of the system being part of the system.

- This may please be noted that the same procedure is adopted by power sector while determining unit cost to be charged.

- The overall efficiency as well as inefficiency will have to be shared by the said corridor. The same procedure is deputed by power sector for determining unit cost to be charged.

ii. **2nd Stage**

- At the second stage, the cost is totally ring fenced.

- The freight component of Rs.1.33/Km/Ton is charged on the distance from Karachi to Power Plant site at Qadirabad only and is further linked to quantum of coal transported.

B. O&M Cost of Rs. 0.304/Km/Ton

- The ICTA was finalized in July, 2015 on the basis of expenses for Financial Year 2013-14 which were of Rs.55.00 billion, whereas, there has been substantial increase of 13% in overall expenses which worked out to Rs.63.00 billion for Financial Year 2015-16.

- Even rate of Rs.2.99/Ton/Km is not favourable for Pakistan Railways as of today.

- As to cost component under reference, the spare parts of the newly procured locomotives and rolling stock have been purchased keeping in view the theoretical usage after induction in PR system to ensure committed train operations.

- Initially, the costs for procurement of spare parts of 31 locomotives were calculated as Rs.733.584 million for three years only. For 30 years, the requirement of spares works out to Rs.7336 million.

- The same is the case with Hopper Wagons which need repairs at more enhanced rate in comparison with that of locomotives.

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- There are some unforeseen expenses as well which cannot be calculated in advance. For example from January, 2017 to May, 2017, one newly inducted locomotive was completely smashed and 6 Hopper Wagons suffered heavy damages. The total damages worked out to Rs.530 millions in just five months period.

- Furthermore, shelf life of locomotive has been taken as 30 years for purpose of depreciation, whereas, in reality it is of 20 years. After 20 years a locomotive needs rehabilitation, the cost of which, internationally, is 60% of the Actual purchase price.

- The oil and lubricants required for the locomotives cannot be earmarked for any specific operations as the same are procured in bulk for overall operations.

- The overall operations & maintenance of Railway Stock, irrespective of being new or old, compulsorily depend upon the following:

    i. Trip schedule of Hopper Wagons;
    ii. Periodic overhaul (POH) of Hoppers;
    iii. Trip Schedule of Locomotives;
    iv. Schedule — A of Locomotives;
    v. Schedule — F of Locomotives;
    vi. Impact of temperature during operations;
    vii. Kilometers Travelled;
    viii. Idling Time;
    ix. Type of haulage by Driver in sequencing of levers.

- The above repair/maintenance schedules are undertaken in loco sheds, C&W Workshops and are applicable to all rolling stock irrespective of its age.

C. Fuel Cost of Rs. 0.404/Km/Ton

HSR vide its letter No. HSR-SAHIWAL-COMMERCIAL-0807 dated 7th August 2017 submitted following reply to the query regarding fuel cost of locomotives:

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- The fuel is not only used in locomotives, but also utilized as Lubricant oil, Engine oil, Furnace oil and on other part of operations at stations i.e. generators for signalling system, lamps fixed on signals, shunting engines, sick lines, power houses, workshops and vehicle used by the Divisional Officers of transportations, Civil, Electrical & mechanical engineers for inspection at stations for safe & smooth running of train operations.

- The present locomotives consumed 4.35 liters/Km of fuel with load of 2250 tons, an average 517 ton per liter km, and latest technology engine GE-40 consumed fuel of approximately 6.40 liters with load of 3400 tons, an average 531 ton per liter km on same average speed.

- It is evident that the efficiency of new locomotives is not double (as envisaged) of the old locomotive as there is only minor increase of fuel consumption (fuel efficiency is not more than 5%).

- The average round trip consumption of HSD of GEU-40 (based on documentary evidence obtained from Operational Paper -27-A diesel) is 13,570 liters for 2,120 kilometers which is equivalent to 6.40 liters per Km.

- In contrast, the average consumption of old GMU-30 locomotive has been calculated as 4.35 liters per Km.

- It is justified that the fuel is consumed on over all the train operations.

D. Details of Capital Expenditure of Rs.26.47 billion on Purchase of Locomotives and Hoper Wagons.

PR provided following workings of required locomotives/wagon and cost along with relevant pages of the contract documents:

Description	Locomotives	Wagons
Total No. of trains in a day	5	5
Turnaround Time	5.35	5.35
Total trains Required	26.75	26.75
Locos/wagons in a train	1	40
Total Requirement	26.75	1,070
Ineffectiveness Allowance @ 15%	4.0125	160.5
Number of brake vans (ZNRV) required	0	3
Total Requirement	**31**	**1,234**

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Cost of Wagons

Description	Unit	Wagons
Unit FOB Price	US$	47,130.00
Freight +CD+ST+Local Charges @ 78.819%	US$	37,147.39
Total Cost	US$	84,277.39
Exchange Rate as on Jan. 2016	Rs./$	105.00
Total Cost	Million Rs.	8.85
Cost of insurance + freight charges	Million Rs.	0.07
Total Cost	Million Rs.	8.92
Units	Nos.	1,234
Total Cost	**Billion Rs.**	**11.00**

Cost of Locomotives

Description	Unit	Locomotives
Contract Price for Procurement of 55 D.E. Locos	Million US$	212.90
CD+ST @ 26%	Million US$	55.35
Training + Inspection Charges	Million US$	0.79
Total Cost of 55 Locos	Million US$	269.04
Cost per Loco	Million US$	4.89
Exchange Rate 2015	Rs./US$	102.00
Cost per Loco	Million Rs.	498.96
Units	Nos.	31
Total Cost	**Billion Rs.**	**15.47**
Total Cost Locomotives+Wagons	**Billion Rs.**	**26.47**
Depreciation of Rolling Stock	**Rs./KM/Ton**	**0.19**

E. Depreciation of Infrastructure

HSR vide its letter No. HSR-SWL-COMMERCIAL-156 dated 3rd October 2017 submitted PRFTC letter dated 29th September 2017 on the subject of detailed working of the depreciation (infrastructure) component.

- According to PRFTC, due to some confusion regarding the details of the depreciation rate offered, the same was not reflected as a whole in the interim Order of NEPRA.

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- The total cost component on account of depreciation was communicated as Rs. 0.72/ton/km, out of which the cost component of depreciation (locomotives & wagons) of Rs. 0.19/ton/km was communicated in detail.

- Now when the detail of the depreciation of infrastructure part has been demanded, the same is being provided for the justification of Rs. 0.53/ton/km. The detail is as under:

Description	**Unit**	**337 KM**
Expenditure on Upgradation	US$ Million	1,023
Exchange Rate	Rs./US$	103
Expenditure on Upgradation	Rs. Billion	105
Price Rise Contingency 12%	Rs. Billion	13
Total Expenditure Inclusive of Price Rise Contingency 12%	Rs. Billion	118
Distance Lahore to Multan	KM	337
Avgerage Life of Infrastructure	Years	30
Depreciation Expenditure per annum	Rs. Billion	4
Depreciation Expenditure per annum/kilometer	Rs. Million	12
Assumed number of Trains to be operated on the Route/day	No.	25
Depreciation Expenditure per train/annum/kilometer	Rs.	466,878
Weight per Train	Tons	2,400
Total Tonnage per train/annum	Tons	876,000
Depreciation cost/kilometre	**Rs./ton/KM**	**0.53**

- According to PRFTC, the existing infrastructure has completed its life and need complete up-gradation which shall be carried out in phases. One such phase is Multan-Lahore Section of 337 KM. The above working of infrastructure cost is based on the cost estimates for this section. Similar cost/Km has been assumed for Karachi to the site of power project for calculation of depreciation cost. PRFTC in support has provided two pages from Draft Preliminary Design General Estimate of Upgrading Pakistan Railways' Existing Mainline (ML-1) Multan Lahore Section dated June 2017, Chengdu, China.

- PRFTC has also provided copy of PC-1 for "Upgradation of Pakistan Railway's Mainline (ML-1) and establishment of Dry Port near Havelian (2016-20)" dated March 2016.

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- In addition to the expenses to be incurred on Multan-Lahore Section, PC-1 provides estimated upgradation cost of US$ 2,328 million on 748 KM Hyderabad-Multan Section.
- In view of the foregone, PRFTC requested the Authority to accept the explanations and drop the queries and the Authority may accept and confirm Freight charge of Rs.2.99/Ton/Km as of June, 2015 with the following indexations:

  i. Fuel freight component with notification of OGRA every month;

  ii. Fixed freight component, O&M freight component and profit margin component with six months (previous) average CPI as on 1st January and 1st July of every year.

  iii. The Authority may also note that freight charge of Rs.2.99/Ton/Km is pegged on monthly committed coal quantity of 366,667 Tons and, as such, Depreciation Cost Component and profit margin may vary if monthly committed coal quantity is changed.

30. **Decision of The Authority**

30.1. The Authority has considered the submissions made by PRFTC regarding justification of the agreed freight charges. Out of requested Rs. 2.99/ton/km freight charges, 94% cost could not be identified directly to this operation rather is based on overall operating expenses of Pakistan Railway in FY 2013-14.The entire Pakistan Railway operating expenses of Rs. 55.332 billion in FY 2013-14 were divided by22.589 million Kilometres travelled in the same year to calculate cost per kilometre of Rs. 2,449.49. This per kilometre cost was divided by the train load of 2400 tons and multiplied by 2 to arrive at round trip cost of Rs. 2.04/ton/km. By adding depreciation cost of infrastructure and rolling stock of Rs. 0.72/ton/km and profit margin 0.23/ton/km, the total freight charges works out Rs. 2.99/ton/km.

30.2. PRFTC through HSR was repeatedly directed to ring fence the coal transportation operation for Sahiwal project. However, PRFTC failed to comply with the directions. In the absence of directly identified cost to coal transportation operation for Sahiwal project, the Authority considered the cost incurred by other power project in the up country by road and transportation of furnace oil by Pakistan Railway through rail network. It has been established that the freight transportation charges of other power project and transportation of furnace oil are comparable with the requested freight charges but are variable in nature. The

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Authority has, therefore, decided to approve the requested freight charges of Rs. 2.99/km for each ton carried by PRFTC/Pakistan Railway. Since PRFTC failed to ring fence the coal transportation operation for Sahiwal project, there is no justification of fixed nature of the freight charges as the costs cannot be directly identified. Accordingly, the Authority has further decided that the approved rate shall be variable (take and pay) and shall be paid for actual quantity of delivered coal with no fixed charges. There shall be no monthly freight shortfall payment and appropriate amendment shall be made in the ICTA to reflect variable nature of the approved freight charges. In accordance with the agreed mechanism in the ICTA, freight charges including O&M shall be subject to biannual adjustment on account of change in CPI (General) and fuel cost shall be subject to adjustment for variation in monthly HSD price. The reference values shall be as per the ICTA.

30.3. The Authority also decided to approve cost of spur line of Rs. 189.82/ton for the first 10 years debt repayment period after COD. The Spur line cost shall be subject to adjustment at actual as per the applicable price escalation, if any, at the time of COD on the basis of verifiable documentary evidence. The IDC shall also be re-established at the time of COD on the basis of actual cost and actual drawdown; thus repayment schedule will accordingly be revised. Invoice for spur line cost shall be raised on the basis of monthly quantity of 302,087 and shall not be subject to variation in actual coal quantity transported. This component shall be adjusted post COD with variation in quarterly KIBOR only. The repayment schedule is attached as **Annex-I**.

30.4. In addition to the above, HSR requested approval of Rs 193 million cost to be paid per annum to PR by the HSR for O&M of railway infrastructure inside the complex. Regarding this issue, the Authority observed that the power complex upfront tariff is a package deal. It has been designed to include all the necessary cost/O&M expense that is needed in the complex to build and run a plant of different sizes. It is a sponsors' own choice to transport coal inside the complex through rail network or through a network of road. The O&M cost given in the tariff is fixed and not subject to any variation therefore, the cost claim of Rs 193 million is not justified, hence has not been considered.

31. ORDER

31.1. The Authority hereby approves Inland Coal Transportation Agreement (ICTA) only to the extent of the following freight rate along with the below mentioned terms and conditions. This order of Authority may be read with the Approval of National Electric Power Regulatory Authority in the matter of Application of

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Huaneng Shandong Ruyi (Pakistan) Energy (Private) Limited (hereinafter referred as "HSR" for Unconditional Acceptance of Upfront Coal Tariff for 2x660 MW Coal Power Plant dated March 31, 2015:

Description	Rs/ton/km	Indexation
Freight Component	1.330	Bi-annual for change in CPI (General)
O&M cost Component	0.304	Bi-annual for change in CPI (General)
Fuel Cost Component	0.404	Monthly revised HSD price
Depreciation/Replacement Cost	0.720	-
Total Freight Charges	**2.990**	-
Spur line Component (Rs /ton)	189.82	Quarterly KIBOR

Terms and Conditions:

a) The approved rate shall be variable and shall be paid only for actual quantity of delivered coal with no fixed charges.

b) There shall be no monthly freight shortfall payment and appropriate amendment shall be made in the ICTA to reflect variable (take and pay) nature of the approved freight charges.

c) In accordance with the agreed mechanism in the ICTA, freight charges including O&M shall be subject to biannual adjustment on account of change in CPI (General) and fuel cost shall be subject to adjustment for variation in monthly HSD price. The reference values shall be as agreed in the ICTA.

d) The approved Spur line cost of Rs. 4.95 billion (including IDC of Rs. 597 million) shall be subject to adjustment at actual as per the applicable price escalation, if any, at the time of COD on the basis of verifiable documentary evidence.

e) The IDC shall also be re-established at the time of COD on the basis of actual cost and actual drawdown and repayment schedule shall be revised accordingly.

f) Invoice for spur line cost shall be raised on the basis of monthly quantity of 302,087 tons and shall not be subject to variation on actual coal quantity transported.

g) Spur line component shall be adjusted post COD with variation in quarterly KIBOR only.

h) The Interim Approval to the ICTA was granted vide Decision of the Authority dated 28-07-2017 and was extended vide Decision dated 6-11-2017, and the said decision has already ceased to exist by its expiry date i.e. 27-01-2018, and all the freight charges incurred/paid during the interim period on the basis of Interim Approval shall be adjusted as per the instant Decision and the terms and conditions contained therein.

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31.2. The instant order along with Annex-I is intimated to the Federal Government for notification in the official Gazette under section 31 (4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

Authority

9.2.18

Himayat Ullah Khan
Member

13/2

Syed Masood-ul-Hassan Naqvi
Member

Saif Ullah Chattha
Vice Chairman

13-2-2018

Brig (R) Tariq Saddozai
Chairman

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Annex-I

ICTA - Debt Servicing (SPURLINE)

Monthly Quantity	0.302	million tons	CAPEX (100% Debt)	4,949.99	US$ Million
Quarterly Quantity	0.906	million tons	Debt in Pak Rupees	4,949.99	PKR Million
KIBOR	6.36%				
Spread over LIBOR	0.50%				
Total Interest Rate	6.86%				

Period	Principal Million Rs	Principal Repayment Million Rs	Interest Million Rs	Balance Million Rs	Debt Service Million Rs	Principal Repayment Rs/ton	Interest Rs/ton	Debt Servicing Rs/ton
1	4,949.99	87.14	84.89	4,862.85	$172.03	96.15	93.67	189.82
2	4,862.85	88.63	83.40	4,774.22	172.03	97.80	92.02	189.82
3	4,774.22	90.15	81.88	4,684.07	172.03	99.48	90.35	189.82
4	4,684.07	91.70	80.33	4,592.37	172.03	101.18	88.64	189.82
1st Year		**357.62**	**330.50**		**688.12**	**394.61**	**364.69**	**759.29**
5	4,592.37	93.27	78.76	4,499.10	172.03	102.92	86.91	189.82
6	4,499.10	94.87	77.16	4,404.23	172.03	104.68	85.14	189.82
7	4,404.23	96.50	75.53	4,307.74	172.03	106.48	83.35	189.82
8	4,307.74	98.15	73.88	4,209.59	172.03	108.30	81.52	189.82
2nd Year		**382.79**	**305.33**		**688.12**	**422.38**	**336.91**	**759.29**
9	4,209.59	99.83	72.19	4,109.75	172.03	110.16	79.66	189.82
10	4,109.75	101.55	70.48	4,008.20	172.03	112.05	77.77	189.82
11	4,008.20	103.29	68.74	3,904.92	172.03	113.97	75.85	189.82
12	3,904.92	105.06	66.97	3,799.86	172.03	115.93	73.90	189.82
3rd Year		**409.73**	**278.39**		**688.12**	**452.11**	**307.18**	**759.29**
13	3,799.86	106.86	65.17	3,692.99	172.03	117.91	71.91	189.82
14	3,692.99	108.69	63.33	3,584.30	172.03	119.94	69.89	189.82
15	3,584.30	110.56	61.47	3,473.74	172.03	121.99	67.83	189.82
16	3,473.74	112.45	59.57	3,361.29	172.03	124.09	65.74	189.82
4th Year		**438.57**	**249.55**		**688.12**	**483.93**	**275.36**	**759.29**
17	3,361.29	114.38	57.65	3,246.90	172.03	126.21	63.61	189.82
18	3,246.90	116.34	55.68	3,130.56	172.03	128.38	61.44	189.82
19	3,130.56	118.34	53.69	3,012.22	172.03	130.58	59.24	189.82
20	3,012.22	120.37	51.66	2,891.85	172.03	132.82	57.00	189.82
5th Year		**469.44**	**218.68**		**688.12**	**517.99**	**241.30**	**759.29**
21	2,891.85	122.43	49.60	2,769.41	172.03	135.10	54.73	189.82
22	2,769.41	124.53	47.50	2,644.88	172.03	137.41	52.41	189.82
23	2,644.88	126.67	45.36	2,518.21	172.03	139.77	50.05	189.82
24	2,518.21	128.84	43.19	2,389.37	172.03	142.17	47.65	189.82
6th Year		**502.48**	**185.64**		**688.12**	**554.45**	**204.84**	**759.29**
25	2,389.37	131.05	40.98	2,258.32	172.03	144.61	45.22	189.82
26	2,258.32	133.30	38.73	2,125.02	172.03	147.09	42.74	189.82
27	2,125.02	135.59	36.44	1,989.43	172.03	149.61	40.21	189.82
28	1,989.43	137.91	34.12	1,851.52	172.03	152.18	37.65	189.82
7th Year		**537.85**	**150.27**		**688.12**	**593.48**	**165.81**	**759.29**
29	1,851.52	140.28	31.75	1,711.25	172.03	154.79	35.04	189.82
30	1,711.25	142.68	29.35	1,568.57	172.03	157.44	32.38	189.82
31	1,568.57	145.13	26.90	1,423.44	172.03	160.14	29.68	189.82
32	1,423.44	147.62	24.41	1,275.82	172.03	162.89	26.94	189.82
8th Year		**575.70**	**112.41**		**688.12**	**635.25**	**124.04**	**759.29**
33	1,275.82	150.15	21.88	1,125.67	172.03	165.68	24.14	189.82
34	1,125.67	152.72	19.31	972.95	172.03	168.52	21.30	189.82
35	972.95	155.34	16.69	817.60	172.03	171.41	18.41	189.82
36	817.60	158.01	14.02	659.60	172.03	174.35	15.47	189.82
9th Year		**616.22**	**71.89**		**688.12**	**679.96**	**79.33**	**759.29**
37	659.60	160.72	11.31	498.88	172.03	177.34	12.48	189.82
38	498.88	163.47	8.56	335.41	172.03	180.38	9.44	189.82
39	335.41	166.28	5.75	169.13	172.03	183.48	6.35	189.82
40	169.13	169.13	2.90	(0.00)	172.03	186.62	3.20	189.82
10th Year		**659.60**	**28.52**		**688.12**	**727.82**	**31.47**	**759.29**

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